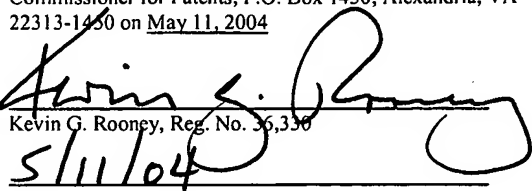




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Kevin G. Rooney, Reg. No. 36,336

5/11/04
Date

Applicant: Christopher P. Bertellotti
Serial No.: 10/090,344
Filed: March 4, 2002
Group Art Unit: 1734
Examiner: George R. Koch
Title: METHOD AND APPARATUS FOR POWDER COATING HOLLOW OBJECTS
Confirmation No.: 3862
Attorney Docket: NOR-1048

Cincinnati, Ohio

May 11, 2004

Mail Stop Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF (PATENT APPLICATION-37 CFR 1.192)

1. Transmitted herewith in triplicate is the APPEAL BRIEF in this application with respect to the Notice of Appeal filed on March 12, 2004.
2. **STATUS OF APPLICANT**
 - ☒ [X] other than a small entity
 - ☐ [] small entity

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 CFR 1.17(f) the fee for filing the Appeal Brief is:

<input type="checkbox"/> small entity	\$165
<input checked="" type="checkbox"/> other than small entity	\$330

Appeal Brief fee due \$330

4. EXTENSION OF TIME

Applicant petitions for an extension of time under 37 CFR 1.136 for the total number of months checked below:

	Fee for Extension of:	other than <u>small entity</u>	Fee for <u>small entity</u>
___ one month		\$ 110.00	\$ 55.00
___ two months		\$ 420.00	\$210.00
___ three months		\$ 950.00	\$475.00
___ four months		\$1,480.00	\$740.00

Fee: \$ _____

If an extension of time is required please consider this a petition therefor.

(check and complete the next item, if applicable)

☐ An extension for _____ months has already been secured and the fee paid therefor of \$ _____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ _____

or

(b) ☒ Applicants believe that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. **TOTAL FEE DUE**

The total fee due is:

Appeal Brief fee:	<u>\$330.00</u>
Extension fee (if any):	\$ _____
Total Fee Due:	<u>\$330.00</u>

6. **FEE PAYMENT**

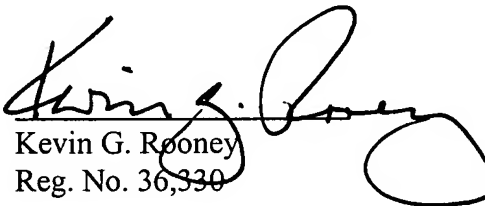
- ☐ Attached is a check in the sum of \$_____.
- ☒ Charge Account No. 23-3000 the sum of \$330.00,
a duplicate of this transmittal is attached.

7. **FEE DEFICIENCY**

- ☒ If any additional extension and/or fee is required, this is a request therefor
and to charge Account No. 23-3000. A duplicate of this transmittal is
attached for that purpose.
- and/or**
- ☒ If any additional fee for claims is required, charge Account No. 23-3000.
A duplicate of this transmittal is attached for that purpose.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.


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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte Bertellotti

Appeal No. _____

Applicant: Christopher P. Bertellotti
Serial No.: 10/090,344
Filed: March 4, 2002
Group Art Unit: 1734
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OBJECTS
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Cincinnati, OH 45202

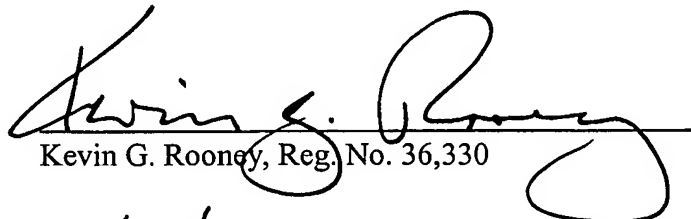
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BRIEF ON APPEAL

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2004.


Kevin G. Rooney, Reg. No. 36,330

5/11/04
Date



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES



Ex parte Bertellotti
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Alexandria, VA 22313-1450

BRIEF ON APPEAL

I. Real Party in Interest

The real party in interest is Nordson Corporation, of Westlake, Ohio, which is the assignee of the present invention.

II. Related Appeals and Interferences

There are no related appeals or interferences known to Appellant or Appellant's legal representative that will directly effect or be directly effected by or have a bearing on the decision of the Board in the present appeal.

III. Status of the Claims

Claims 1-16 and 23 are pending in Appellant's application, with claims 1, 5, 8, 11, 13 and 16 being once amended. All pending claims stand rejected, and are now on appeal.

IV. Status of Amendments

There have been no amendments filed after the final rejection (Paper 5) mailed on January 5, 2004.

V. Summary of the Invention

Appellant's invention is directed generally to an apparatus for applying powder to an interior surface 100 of a hollow object 14. Independent claim 1 comprises a powder discharge device 12 adapted to receive and discharge powder through an outlet 46. An object holder 92, 94 holds the object 14 such that the outlet 46 is positioned within the hollow object 14 adjacent the interior surface 100. A rotating mechanism 92a, 94a, 98, 102 engages and rotates the hollow object 14 about an axis of rotation such that powder 48 discharging from the outlet 46 coats the interior surface 100 as the interior surface 100 rotates past the outlet 46. The outlet 46 is oriented to discharge the powder in a direction transverse to the axis of rotation and normal to the outlet 46.

Independent claim 8 comprises a chamber having an upper portion 40, a lower portion 60, and inclined walls 50, 52 converging in a direction from the lower portion 60 toward the upper portion 40. A powder fluidizing bed 56, 61, 64 is disposed at the lower portion 60 of the chamber and is adapted to receive and fluidize a bed of the powder to form a powder cloud

emanating upwardly from the lower portion 60, through the converging area 50, 52 to the upper portion 40 of the chamber. Positioned at the upper portion 40 and at a location between the inclined walls 50, 52 is an outlet 46 configured to direct at least one stream of the powder from the powder cloud out of the chamber. A powder collection unit 90 is positioned to collect excess powder which has not been applied to the object 14. An object holder 92, 94 is configured to hold the object 14 such that the outlet 46 is positioned within the hollow object 14 adjacent the interior surface 100. A rotating mechanism 92a, 94a, 98, 102 is configured to engage and rotate the hollow object 14 such that powder discharging from the outlet 46 coats the interior surface 100 as the interior surface 100 rotates past the outlet 46.

Independent claim 13 comprises a first chamber having an upper portion 40, a lower portion 60 and an outlet 46 in the upper portion 40. A powder fluidizing bed 56, 61, 64 is disposed at the lower portion 60 of the first chamber and is adapted to receive and fluidize a bed 54 of the powder to form a powder cloud 44 emanating upwardly from the lower portion 40 to the upper portion 60 and through the outlet 46. An object holder 92, 94 is configured to hold the object 14 such that the outlet 46 is positioned within the hollow object 14 adjacent the interior surface 100. A powder collection area 80, 82 is positioned outside the first chamber. A rotating mechanism 92a, 94a, 98, 102 engages and rotates the hollow object 14 about an axis of rotation such that powder 48 discharging from the outlet 46 coats the interior surface 100 as the interior surface 100 rotates past the outlet 46. The outlet 46 is oriented to discharge the powder 48 in a direction transverse to the axis of rotation and normal to the outlet 46. A powder collection unit 90 is connected in fluid communication with the powder collection area 80, 82 for collecting excess powder which has not been applied to the object 14.

VI. Issues

1. Whether claims 1, 4 and 7 were improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,850,660 to Inamura et al. (hereinafter *Inamura*) in view of U.S. Patent No. 4,958,587 to Fogal, Sr. et al. (hereinafter *Fogal*).

2. Whether claims 8-16 were improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Inamura*, *Fogal* and *Gillette* further in view of *Goodridge* and U.S. Patent No. 6,068,702 to Bertellotti et al. (hereinafter *Bertellotti*).

VII. Grouping of Claims

Claims 1-7 stand or fall together.

Claims 8-12 stand or fall together.

Claims 13-16 and 23 stand or fall together.

VIII. Argument

Appellant respectfully submits that the Examiner's obviousness rejections of claims 1-16 and 23 are not supported on the record, and that the rejections should be reversed. Reversal of all rejections, and passage of this case onto allowance, are therefore respectfully requested.

A *prima facie* showing of obviousness requires that the Examiner establish that the differences between a claimed invention and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. §103(a). Such a showing requires that all claimed features be

disclosed or suggested by the prior art. Such a showing also requires objective evidence of the suggestion, teaching or motivation to combine or modify prior art references, as "[c]ombining prior art references without evidence of such a suggestion, teaching or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability -- the essence of hindsight." In re Dembiczak, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

A. Claims 1, 4 and 7 were improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Inamura* in view of *Fogal*.

Appellant respectfully submits that the Examiner's obviousness rejections of claims 1, 4 and 7 are not supported on the record, and that the rejections should be reversed. In particular, the Examiner has failed to establish a *prima facie* case of obviousness. Instead, the Examiner has identified individual claimed features in the prior art and attempted to combine those features using the guidance provided by Appellant's application and without a showing of an appropriate rationale to combine.

Claim 1

Independent claim 1 is representative of the group of claims containing claims 1-7. Claim 1 recites a powder discharge device adapted to receive powder and discharge the powder through an outlet, and an object holder configured to hold the object such that the outlet is "positioned within the hollow object adjacent the interior surface and oriented toward the interior surface." Claim 1 further recites a rotating mechanism configured to engage and rotate the hollow object about an axis of rotation such that powder discharging from the outlet coats the

interior surface as the interior surface rotates past the outlet. The outlet is “oriented to discharge the powder in a direction transverse to the axis of rotation and normal to the outlet.”

In rejecting claim 1, the Examiner relies on the combination of *Inamura* and *Fogal*. The Examiner correctly admits that *Inamura* “does not disclose that the outlet is positioned within the hollow object adjacent the interior surface or that the outlet is oriented to discharge powder in a direction transverse the axis of rotation and normal to the outlet.” (Paper 5, ¶ 4). With reference to Figure 1 of *Fogal*, the Examiner contends that *Fogal* discloses these features absent from *Inamura* and further contends that it would have been obvious to combine *Fogal* with *Inamura* because “this configuration allows interior coating in a short period of time with minimum effort and relatively low cost (column 1, lines 48-51).” (Paper 5, ¶ 5). Appellant respectfully disagrees for the reasons set forth below.

The Examiner alleges that *Fogal* discloses positioning an outlet of a powder discharge device within a hollow object adjacent the interior surface. However, *Fogal* does not provide a sufficient motivation or suggestion for positioning the outlet of the *Inamura* powder discharge device (22) within the hollow object (A) adjacent the interior surface. The motivation for combining *Fogal* with *Inamura* identified by the Examiner relates to a general advantage offered by the overall device of *Fogal*. This general advantage does not amount to a sufficient rationale for repositioning the outlet of the *Inamura* powder discharge device (22) inside the hollow object (A).

Inamura deliberately spaces the outlet of the powder discharge device (22) outside the hollow object (A). As explained at column 1, lines 38-60 of *Inamura*, positioning the outlet of the powder dispensing device (22) inside the hollow object (A) may result in unwanted spark

discharges between the powder dispensing device (22) and the hollow object (A), which is a metal pipe. The spark discharges have a detrimental effect on the resultant coating, which is characterized by a non-uniform thickness and incorporates numerous pinholes. Hence, *Inamura* actually teaches away from the combination suggested by the Examiner.

The spray heads (31, 32) in *Fogal* are discharging either tire sealant or liquid coating material, as described at column 3, lines 30-35. Specifically, the spray heads (31, 32) are not discharging electrostatically charged powder and, therefore, are not susceptible to spark discharges. Moreover, the hollow object in *Fogal* is a tire formed of a rubber encased tire body, which is not metallic and is not prone to spark discharges. It follows that the proximity of the spray heads to the hollow object in *Fogal* is unimportant to *Fogal* as spark discharges are an impossibility. Hence, *Fogal* does not recognize the difficulties associated with applying electrostatic powder coatings and its teachings are not applicable to powder coating applicators.

The Examiner alleges that *Fogal* discloses orienting the outlet of a powder discharge device to discharge powder in a direction transverse the axis of rotation and normal to the outlet. However, *Fogal* does not provide a sufficient motivation or suggestion for reorienting the outlet of the *Inamura* powder discharge device (22) in a direction so that powder is discharged transverse to the axis of rotation and normal to the outlet. As explained above, *Inamura* intentionally positions the outlet outside the hollow object (A). Changing the orientation of the outlet in *Inamura* so that the powder discharge is transverse to the axis of rotation would direct the powder away from the entrance to the hollow object (A). The transversely-oriented stream of powder would not enter the baffle (14), much less enter the hollow object (A) after traveling through the intervening baffle (14). Instead, the powder would

merely disperse into the environment surrounding the hollow object (A) as waste and would not coat the interior of the hollow object (A).

Modifying the powder discharge device of *Inamura* as suggested by the Examiner would also defeat the mechanism that provides the uniform coating on hollow object (A). The powder in *Inamura* is suctioned downstream by an air sucking means (e.g., suction pump or fan) that is not depicted in the Figures. If the outlet of the *Inamura* powder discharge device (22) were oriented transverse to the axis of rotation and assuming *arguendo* that the outlet could be positioned inside the hollow object which is not permitted for the reasons explained above, the powder would strike the sidewall of the hollow object (A). A portion of the powder would coat the sidewall and a portion would not deposit. Undeposited powder would be suctioned downstream. The impact of the powder with the sidewall would significantly alter the flow of powder, in contrast to directing the initial discharge of powder parallel to the axis of rotation. The altered flow would unevenly distribute the powder released into the hollow object (A). In addition, a band extending about the sidewall that is in the direct line-of-sight of the outlet would likely receive a heavy coating in contrast to downstream lengths of the hollow object (A) that are only exposed to undeposited powder.

To summarize, the *Inamura* device (22) must be aligned to discharge powder parallel to the object's longitudinal axis in order to operate properly. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). The Examiner has ignored the disclosure of *Inamura* that teaches away from the Examiner's suggested combination. The mere

fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The alleged motivation to combine identified by the Examiner in *Fogal* is no more than a general advantage of the overall *Fogal* device and does not provide an appropriate rationale to combine *Fogal* with *Inamura*. Finally, if the proposed modification renders the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). As explained above, either positioning the outlet of the *Inamura* powder discharge device (22) inside the hollow object (A) or reorienting the outlet so that powder is discharged transverse to the axis of rotation and normal to the outlet would render *Inamura* unsuitable for its intended purpose of providing a uniform coating along the length of the hollow object (A). *Inamura* discloses that spark discharges would occur if the outlet is placed inside the hollow object (A). Furthermore, the outlet would not direct powder to even enter the hollow object (A) if the outlet were oriented transverse to the axis of rotation of the hollow object (A) and deliberately positioned outside the hollow object (A) to prevent spark discharges.

Therefore, for at least these multiple reasons, the Examiner has failed to support a *prima facie* case of obviousness. Reversal of the Examiner's rejection, and allowance of claim 1, are therefore respectfully requested.

Claims 2-7

Claims 2-7 are not separately argued. As claims 2-7 depend either directly or indirectly from independent claim 1, Appellant submits that these claims are patentable for at least the same reason as claim 1. Reversal of the Examiner's rejections, and allowance of these claims, are therefore respectfully requested.

B. Claims 8-16 were improperly rejected as being unpatentable over *Inamura* and *Fogal* and *Gillette* further in view of *Goodridge* and *Bertellotti*.

Appellant respectfully submits that the Examiner's obviousness rejections of claims 8-16 are not supported on the record, and that the rejections should be reversed. In rejecting these claims, the Examiner relies on the combination of five references, i.e., *Inamura*, *Fogal*, *Gillette*, *Goodridge*, and *Bertellotti*. The Examiner has failed to establish a *prima facie* case of obviousness as to any of these pending claims. In particular, the Examiner has identified individual claimed features in the prior art and attempted to combine those features using the guidance provided by Appellant's application and without a showing of an appropriate rationale to combine.

Claim 8

Independent claim 8 is representative of the group of claims containing claims 8-12. Claim 8 recites a chamber having "an upper portion, a lower portion, and inclined walls converging in a direction from said lower portion toward said upper portion," a powder fluidizing bed "disposed at said lower portion of said chamber and adapted to receive and fluidize a bed of

the powder to form a powder cloud emanating upwardly from said lower portion, through said converging area to said upper portion of said chamber,” and an outlet “positioned at said upper portion of said chamber and configured to direct at least one stream of said powder from said powder cloud out of said chamber.” The outlet is “positioned at a location between said inclined walls.” Claim 8 further recites a powder collection unit “positioned to collect excess powder which has not been applied to the object,” an object holder configured to hold the object such that the outlet is positioned within the hollow object adjacent the interior surface, and a rotating mechanism configured to engage and rotate the hollow object.

Independent claim 8 recites that the outlet is positioned within the hollow object adjacent the interior surface. As explained above with regard to independent claim 1, the Examiner has improperly combined *Inamura* and *Fogal* to allegedly render this recitation obvious.

The Examiner correctly asserts that *Inamura* and *Fogal* do not collectively disclose a chamber and an outlet positioned in an upper portion of the chamber, in which the chamber is adapted to receive and fluidize a bed of the powder to form a powder cloud discharging through the outlet. (Paper 5, ¶ 10). The Examiner contends that *Gillette* cures this deficiency. (Paper 5, ¶ 20). As a rationale to make this combination, the Examiner contends that it would have been obvious to combine *Gillette* with *Fogal* and *Inamura* because “this system minimizes coating material loss, and improves cleanliness of the overall system (column 6, lines 36-68).” (Paper 5, ¶ 20). Appellant respectfully disagrees with the Examiner's contention for the reasons set forth below.

Gillette does not provide a sufficient motivation or suggestion for combining this specific powder discharge device with the disclosures of *Inamura* and *Fogal*. The Examiner identifies a motivation for combining these references relates to a general advantage offered by the overall device of *Gillette*. This general advantage does not amount to a sufficient rationale for modifying the powder discharge device of *Inamura* to have the structure allegedly disclosed in *Gillette*.

The Examiner has identified a chamber (38) and an outlet (42) from the chamber (38). However, the Examiner ignores that the discussion in *Gillette* at column 5, lines 46-60 describing that the chamber (38) receives air from air supply (146), which flows through the outlet (42) into plenum (18) separated from chamber (38) by wall (44). (*Gillette*.) The air is modified by the electrode (40) inside plenum (18) then flows upwardly through a porous plate (24) for fluidizing powder positioned on the upper side of porous plate (24). The powder is delivered from a hopper (72) to the center of the upper side of porous plate (24) by operation of a screw (108). Therefore, powder does not flow through the outlet (42) identified by the Examiner in *Gillette*. Instead, only pressurized air flows through the outlet (42) and interacts with powder only after passing through plenum (18) and porous plate (24). Therefore, *Gillette* does not recognize any benefit relating to powder discharge that would result from discharging powder through an outlet in an upper portion of a chamber in which a powder cloud is created.

Assuming *arguendo* that one combined *Inamura*, *Fogal* and *Gillette* as suggested by the Examiner, the resulting device would not include all the elements of Appellant's claim 8. Specifically, claim 8 recites that the powder fluidizing bed is adapted to form a powder cloud in the chamber and that the outlet is positioned "at an upper portion of the chamber" to direct a

powder stream out of the chamber. The chamber (38) identified by the Examiner never contains a powder cloud, only air, and the outlet (42) identified by the Examiner cannot be at the upper portion of a chamber containing a powder cloud. Therefore, the outlet (42) cannot direct a stream of powder from the chamber (38).

The Examiner correctly concedes that the resultant device from the combination of *Inamura*, *Fogal*, and *Gillette* does not disclose “a converging area gradually decreasing in dimension from lower portion to upper portion.” (Paper 5, ¶ 22). The Examiner contends that it would have been obvious to one of ordinary skill in the art to have modified the device resulting from the combination of *Inamura*, *Fogal*, and *Gillette* to include the elongated slot with inclined converging walls of *Goodridge* to improve “effectiveness of application.” (Paper 5, ¶ 23). Appellant respectfully disagrees with the Examiner's contentions for the reasons set forth below.

Goodridge does not provide a sufficient motivation or suggestion for combining this specific powder discharge device with the disclosures of *Inamura*, *Fogal* and *Gillette*. The Examiner identifies a motivation for combining these references relates to a general advantage offered by the overall device of *Goodridge*. This general advantage does not amount to a sufficient rationale for modifying the outlet of *Gillette* to have the structure allegedly disclosed in *Goodridge*.

A person of ordinary skill in the art would not be motivated to modify the composite device of *Inamura*, *Fogal* and *Gillette* in the manner suggested by the Examiner to solve a problem that does not exist in any of these references. *Goodridge* discloses that the electrode arrangement provides effective charging of small particles that pass through the gap (58) between the electrodes (56). *Inamura* and *Fogal* do not show an outlet. In *Gillette*, powder

does not pass through the outlet (42) identified by the Examiner. Instead, only air passes through the outlet (42) in *Gillette*. Therefore, somehow modifying the outlet (42) in *Gillette* with the converging inclined walls shown in *Goodridge* could not provide effective charging of small particles because particles do not pass through the outlet (42) of *Gillette*.

Assuming *arguendo* that one combined *Inamura*, *Fogal*, *Gillette* and *Goodridge* as suggested by the Examiner, the resulting device would not include all the elements of Appellant's claim 8. Specifically, the resulting device would not include a fluidizing bed at a lower portion of a chamber containing a cloud of powder, an outlet for a stream of powder at an upper portion of the chamber, and inclined walls converging from the lower portion to the upper portion. The volume defined above porous filter (24) and generally enclosed by the tank (130) to be coated is the only volume in *Gillette* in which fluidized powder is present. The outlet (42) identified by the Examiner in *Gillette* is not even in this chamber. Even if outlet (42) were positioned between inclined walls, as taught in *Goodridge*, the outlet (42) still would not be positioned above the porous filter (24).

The Examiner correctly concedes that the resultant device from the combination of *Inamura*, *Fogal*, *Gillette* and *Goodridge* does not disclose "a powder collection unit." (Paper 5, ¶ 22). The Examiner contends that it would have been obvious to one of ordinary skill in the art to have modified the device resulting from the combination of *Inamura*, *Fogal*, *Gillette* and *Goodridge* to include the powder collection unit of *Bertellotti* to "allow for retrieval of the unused particle material" and "to improve coating efficiency and reduce loss." (Paper 5, ¶ 24). Appellant respectfully disagrees with the Examiner's contentions for the reasons set forth below.

Bertellotti does not provide a sufficient motivation or suggestion for combining a collection unit with the disclosures of *Inamura*, *Fogal*, *Gillette* and *Goodridge*. *Bertellotti* discloses a collection unit (14), a hood (12) in which a cloud of powder is present, and an air and powder pathway (70) that couples the hood (12) and collection unit (14). However, such a structure would be impossible to combine with *Gillette* as the tank (130) being coated in *Gillette* defines the volume in which the powder cloud is present. The sidewall of the tank (130) would have to be provided with an air and powder pathway (70), as shown in *Bertellotti*, which would render *Bertellotti* unsatisfactory for its intended purpose as the coated tanks would have an additional opening in their sidewall.

Therefore, for at least these multiple reasons, the Examiner has failed to support a *prima facie* case of obviousness. Reversal of the Examiner's rejection, and allowance of claim 8, are therefore respectfully requested.

Claims 9-12

Claims 9-12 depending from claim 8 are not separately argued. Appellant submits that claims 9-12 are patentable for at least the same reasons as claim 8. Reversal of the Examiner's rejections, and allowance of these claims, are therefore respectfully requested.

Claim 13

Independent claim 13 is representative of the group of claims containing claims 13-16 and 23. Claim 13 recites a powder discharge device adapted to receive powder and discharge the powder through an outlet, and an object holder configured to hold the object such

that the outlet is “positioned within the hollow object adjacent the interior surface and oriented toward the interior surface.” Claim 13 further recites a rotating mechanism configured to engage and rotate the hollow object about an axis of rotation such that powder discharging from the outlet coats the interior surface as the interior surface rotates past the outlet.

Independent claim 13 further recites that the outlet is positioned within the hollow object “adjacent the interior surface” and, furthermore, that the outlet is “oriented to discharge the powder in a direction transverse to the axis of rotation and normal to the outlet.” This recitation is identical to recitations found in independent claim 1. Therefore, Appellant incorporates by reference the discussion presented above regarding the Examiner’s failure to establish *prima facie* obviousness with regard to the combination of *Fogal* with *Inamura*.

The Examiner attempts to combine *Goodridge* with *Inamura*, *Fogal*, and *Gillette* and apply the combination against independent claim 13 as applied against independent claim 8. (Paper 5 at ¶ 28). The Examiner asserts that *Goodridge* discloses an elongate slot having “inclined walls which converging in a direction from the lower portion toward the upper portion” and that the outlet “is positioned at a location between the inclined walls.” (Paper 5, ¶ 23). However, these structural recitations, which are found in independent claim 8, are wholly absent from claim 13. Therefore, the Examiner’s attempt to apply this combination of references against claim 13 is improper.

Independent claim 13 also contains a recitation of a “powder collection unit” that is analogous to a recitation found in independent claim 8. Therefore, Appellant incorporates by reference the discussion presented above regarding the Examiner’s failure to establish *prima*

facie obviousness with regard to the combination of *Bertellotti* with *Inamura*, *Fogal*, *Gillette* and *Goodridge*.

Independent claim 13 further recites “a powder collection area” positioned outside a first chamber containing a powder fluidizing bed and a “powder collection unit connected in fluid communication with the collection area.” The Examiner contends that the powder collection unit of *Gillette* includes such a powder collection area.

The Examiner has failed to provide a proper motivation to modify the resultant device of *Inamura*, *Fogal*, *Gillette*, *Goodridge* and *Bertellotti* to have a powder collection area outside the chamber containing the fluidized bed as disclosed in *Gillette*. The device of *Gillette* is oriented so that powder is discharged vertically. Undeposited powder is directed into a gap (62) having walls (46, 48) that lead back to hopper (72). This powder collection area surrounds the porous plate (24). The collection of undeposited powder through gap (62) in *Gillette* is promoted by the action of gravity.

Were the outlet in *Inamura* oriented parallel to the axis of rotation of hollow object (A), the powder collection area disclosed by *Gillette* would be oriented horizontally. Hence, gravity would not promote collection of undeposited powder through gap (62) and the *Inamura* device would be rendered unsatisfactory for its intended purpose. Were the outlet in *Inamura* oriented transverse to the axis of rotation of hollow object (A), which would be improper for the reasons given above in the context of claim 1, undeposited powder would be collected through gap (62). However, powder would not enter and coat the hollow object (A). Hence, the device would be rendered unsatisfactory for its intended purpose.

Moreover, the powder collection area identified by the examiner in *Gillette* would not be simply substituted into the powder collection device disclosed in *Bertellotti*. As explained above, *Bertellotti* discloses a collection unit (14), a hood (12) in which a cloud of powder is present, and an air and powder pathway (70) that couples the hood (12) and collection unit (14). *Gillette* discloses a powder collection area positioned annularly about porous plate (24) and the powder fluidizing bed. Substituting this structure in *Bertellotti* would necessitate locating a collection area inside hood (12) and encircling the porous member (62) and fluidizing bed (40). However, the collection area in *Bertellotti* is inside the collection unit (14), not inside the hood (12). So, any unused powder collected by a collection area surrounding porous member (62) and fluidizing bed (40) would not be collected by the collection unit (14).

Therefore, for at least these multiple reasons, the Examiner has failed to support a *prima facie* case of obviousness. Reversal of the Examiner's rejection, and allowance of claim 13, are therefore respectfully requested.

Claims 14-16 and 23

Claims 14-16 and 23 are not separately argued. As these claims depend directly or indirectly from independent claim 13, Appellant submits that these claims are patentable for at least the same reason as claim 13. Reversal of the Examiner's rejections, and allowance of these claims, are therefore respectfully requested.

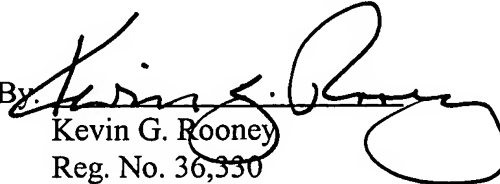
IX. Conclusion

In conclusion, Appellant respectfully requests that the Board reverse the Examiner's rejections of claims 1-16 and 23, and that the application be passed to issue. If there are any questions regarding the foregoing, please contact the undersigned at 513/241-2324. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

Date: 5/11/04

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APPENDIX OF CLAIMS

1. (Once Amended) Apparatus for applying powder to at least an interior surface of a hollow object, the apparatus comprising:

a powder discharge device adapted to receive powder and discharge the powder through an outlet;

an object holder configured to hold said object such that said outlet is positioned within the hollow object adjacent the interior surface; and

a rotating mechanism configured to engage and rotate the hollow object about an axis of rotation such that powder discharging from the outlet coats the interior surface as the interior surface rotates past the outlet, wherein the outlet is oriented to discharge the powder in a direction transverse to the axis of rotation and normal to the outlet.

2. (Original) The apparatus of claim 1, wherein said powder discharge device further comprises a chamber, and said outlet is positioned in an upper portion of said chamber, said chamber adapted to receive and fluidize a bed of the powder to form a powder cloud discharging through said outlet.

3. (Original) The apparatus of claim 2, further comprising:

a porous member positioned at a lower portion of said chamber below the bed of powder and having an upper side facing the bed of powder and an opposite lower side;

an electrostatic charging device positioned in an air flow path leading to said lower side of said porous member; and

a pressurized air inlet for directing pressurized air into said air flow path such that the air is charged by said electrostatic charging device and then passes respectively through the lower and upper sides of said porous member and into the bed of powder.

4. (Original) The apparatus of claim 1, wherein the hollow object includes an exterior surface and said object holder further comprises a pair of rollers configured to engage generally opposite sides of the exterior surface, and said rotating mechanism further comprises a motor coupled to at least one of said rollers.

5. (Once Amended) The apparatus of claim 1, wherein said outlet further comprises an elongate slot configured to extend parallel to the axis of rotation.

6. (Original) The apparatus of claim 5, wherein said powder discharge device includes a chamber and said elongate slot is formed between converging walls of said chamber.

7. (Original) The apparatus of claim 1, further comprising:

a transfer mechanism coupled to said powder discharge device and operative to transfer said powder discharge device from a position outside the hollow object to a position within the hollow object.

8. (Once Amended) Apparatus for applying powder to at least an interior surface of a hollow object, the apparatus comprising:

a chamber having an upper portion, a lower portion, and inclined walls converging in a direction from said lower portion toward said upper portion;

a powder fluidizing bed disposed at said lower portion of said chamber and adapted to receive and fluidize a bed of the powder to form a powder cloud emanating upwardly from said lower portion, through said converging area to said upper portion of said chamber;

an outlet positioned at said upper portion of said chamber and configured to direct at least one stream of said powder from said powder cloud out of said chamber, said outlet positioned at a location between said inclined walls;

a powder collection unit positioned to collect excess powder which has not been applied to the object;

an object holder configured to hold the object such that said outlet is positioned within the hollow object adjacent the interior surface; and

a rotating mechanism configured to engage and rotate the hollow object such that powder discharging from the outlet coats the interior surface as the interior surface rotates past the outlet.

9. (Original) The apparatus of claim 8, further comprising:

a porous member disposed at said lower portion of said chamber below the bed of powder and having an upper side facing the bed of powder and an opposite lower side;

an electrostatic charging device positioned in an air flow path leading to said lower side of said porous member; and

a pressurized air inlet for directing pressurized air into said air flow path such that the air is charged by said electrostatic charging device and then passes respectively through the lower and upper sides of said porous member and into the bed of powder.

10. (Original) The apparatus of claim 8, wherein the hollow object includes an exterior surface and said object holder further comprises a pair of rollers configured to engage generally opposite sides of the exterior surface, and said rotating mechanism further comprises a motor coupled to at least one of said rollers.

11. (Once Amended) The apparatus of claim 8, wherein the rotating mechanism rotates the hollow object about an axis of rotation and said outlet further comprises an elongate slot configured to extend parallel to the axis of rotation.

12. (Original) The apparatus of claim 8, further comprising:

a transfer mechanism coupled to said chamber and operative to transfer said chamber from a position outside the hollow object to a position within the hollow object.

13. (Once Amended) Apparatus for applying powder to at least an interior surface of a hollow object, the apparatus comprising:

a first chamber having an upper portion, a lower portion and an outlet in said upper portion;

a powder fluidizing bed disposed at said lower portion of said first chamber and adapted to receive and fluidize a bed of the powder to form a powder cloud emanating upwardly from said lower portion to said upper portion and through said outlet;

an object holder configured to hold the object such that said outlet is positioned within the hollow object adjacent the interior surface;

a powder collection area positioned outside said first chamber;

a rotating mechanism configured to engage and rotate the hollow object about an axis of rotation such that powder discharging from the outlet coats the interior surface as the interior surface rotates past the outlet, wherein the outlet is oriented to discharge the powder in a direction transverse to the axis of rotation and normal to the outlet; and

a powder collection unit connected in fluid communication with said powder collection area for collecting excess powder which has not been applied to the object.

14. (Original) The apparatus of claim 13, further comprising a second chamber positioned below said first chamber, wherein the hollow object includes an exterior surface and said object holder further comprises a pair of rollers mounted within said second chamber and configured to engage generally opposite sides of the exterior surface, and said rotating mechanism further comprises a motor coupled to at least one of said rollers.

15. (Original) The apparatus of claim 14, further comprising:

respective powder removing devices within said second chamber and operating to remove powder from said rollers for subsequent collection by said powder collection unit.

16. (Once Amended) The apparatus of claim 13, further comprising:

a transfer mechanism coupled to said first chamber and operative to transfer said first chamber from a position outside the hollow object to a position within the hollow object.

23. (Previously Added) The apparatus of claim 15, wherein said respective powder removing devices further comprise a nozzle oriented to direct positive pressurized air toward the corresponding one of said pair of rollers.